

AD-A080 880 ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/8 5/2
19702A, GSRS, MISSILE NUMBER BR-1, ROUND NUMBER B-34, 31 AUGUST--ETC(U)

AUG 79

UNCLASSIFIED ERADCOM/ABL-DR-1060

ML

1 OF 1
45-0000

END
DATE FILMED
3 - 80
per

ADA080880

DISCLAIMER NOTICE

**THIS DOCUMENT IS BEST QUALITY
PRACTICABLE. THE COPY FURNISHED
TO DDC CONTAINED A SIGNIFICANT
NUMBER OF PAGES WHICH DO NOT
REPRODUCE LEGIBLY.**

READ INSTRUCTIONS
BEFORE COMPLETING FORM

REPORT DOCUMENTATION PAGE	
1. REPORT NUMBER	2. GOVT ACCESSION NO.
DR 1060	3. DATE REPORT WAS PREPARED
4. TITLE (and Subtitle)	5. REPORTING ORGANIZATION NAME AND ADDRESS
19702A GSRS	White Sands Meteorological Team
Missile Number BR-1	6. CONTRACT OR GRANT NUMBER
Round Number B-34	DA Task 1P665702D127-02
7. AUTHORITY	7. HIGH DENSITY TEST AREA'S WORK UNIT NUMBER
8. CONTROLLING OFFICE NAME AND ADDRESS	12. REPORT DATE
US Army Electronics Research & Development Comd Atmospheric Sciences Laboratory White Sands Missile Range, New Mexico 88002	August 1979
9. MANUFACTURING AREA'S NAME & ADDRESS if different from Controlling Office	13. NUMBER OF PAGES
US Army Electronics Research & Development Comd	21
10. SECURITY CLASSIFICATION	14. SECURITY CLASSIFICATION DOWNGRADING AND CLEAVERING
Approved for public release; distribution unlimited.	UNCLASSIFIED
11. ELEMENTARY NOTES	
12. APPROVALS: I have reviewed this document and identify by block number	
1. Ballistics	
2. Meteorology	
3. Wind	
13. APPROVALS: I have reviewed this document and identify by block number	
Meteorological data gather for the launching of 19702A GSRS, Missile Number BR-1, Round Number B-34, are presented in tabular form.	

CONTENTS

	PAGE
INTRODUCTION-----	1
DISCUSSION-----	1
MAP-----	2
TABLES	
1. Surface Observation Taken at 0900 MDT at LC-33-----	3
2. Anemometer-Measured Wind Speed and Direction, LC-33 Fixed Pole, Taken at 0900 MDT-----	4
3. Anemometer-Measured Wind Speed and Direction, Tower Levels 1, 2, 3 and 4, Taken at 0900 MDT-----	5
4. LC-33 Pilot Balloon Measured Wind Data at 0848 MDT-----	6
5. LC-33 Pilot Balloon Measured Wind Data at 0900 MDT-----	7
6. Nick Site Pilot Balloon Measured Wind Data at 0851 MDT-----	8
7. Nick Site Pilot Balloon Measured Wind Data at 0900 MDT-----	9
8. SMR Significant Level Data at 0838 MST-----	10
9. SMR Upper Air Data at 0838 MST-----	12
10. SMR Mandatory Levels at 0838 MST-----	17

INTRODUCTION

19702A GSRS, Missile Number BR-1, Round Number B-34, was launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 0900 MDT, 31 August 1979. The scheduled launch time was 0900 MDT.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

(1) Low level wind data were obtained from RAPTS T-9 pibal observation at:

SITE AND ALTITUDE

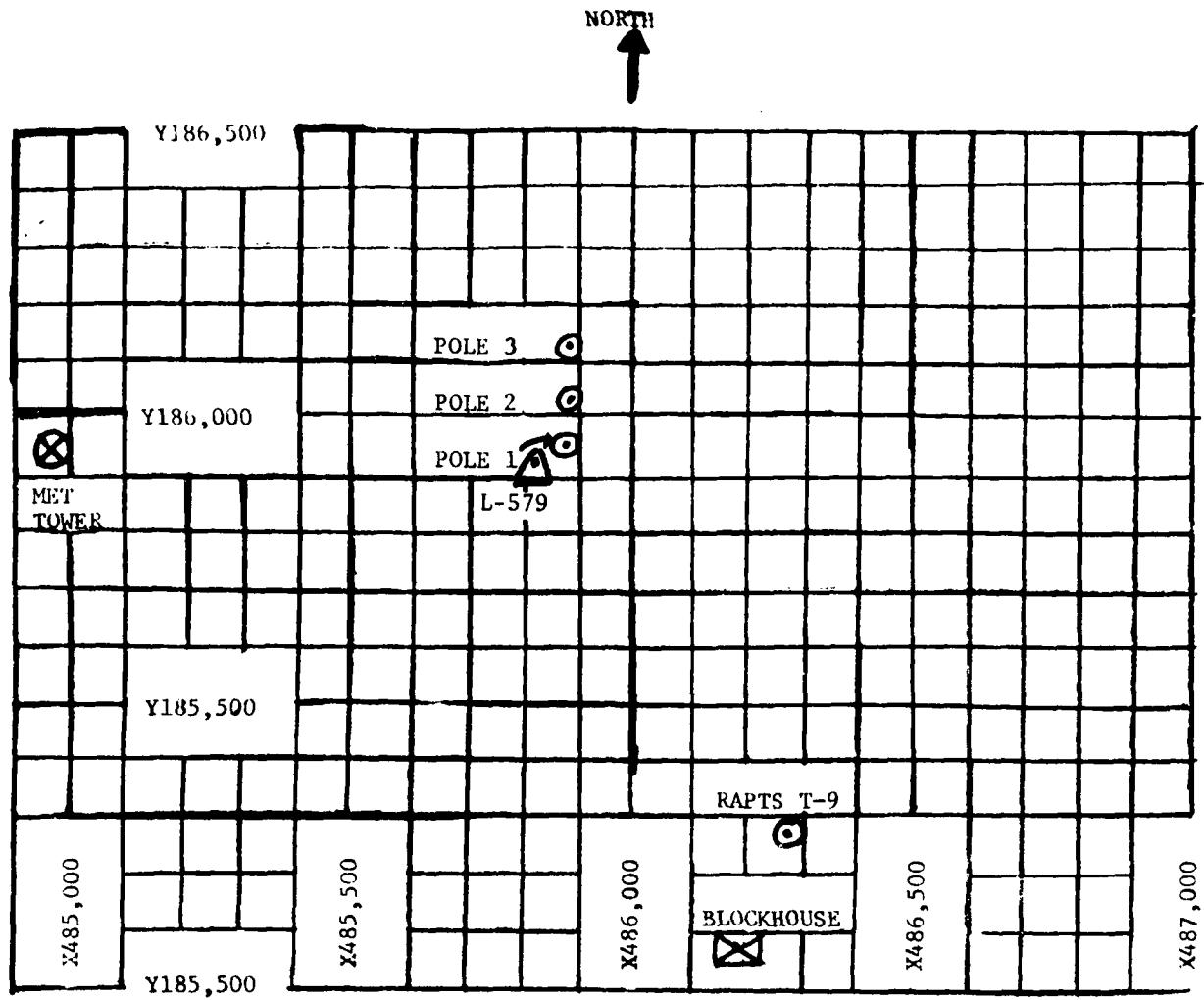
LC-33 1680 and 2040 Meters
NICK 2040 Meters

(2) Air structure data (rawinsonde) were collected at the following Met Sites. Data were collected from surface to 88,500 feet in 500-feet increments.

SITE AND TIME

SMR 0838 MST

Accession For	
NTIS GEN&I	
DDC TAB	
Unannounced	
Justification	
By _____	
Distribution _____	
Availability _____	
Dist	Available or special
A	230



1. MET TOWER - 4 Bendix Model T-20 Anemometers at 12 ft, 62 ft, 102 ft, and 202 ft with E/A recorders.
2. POLE ANEMOMETER - Bendix Model T-120 with E/A recorders.
 - (a) Pole #1 - 38.7 ft
 - (b) Pole #2 - 53.0 ft
 - (c) Pole #3 - 83.6 ft
3. RAPTS T-9 Radar Automatic Pilot-Balloon Tracking System T-9 Radar.

TABLE 1. Surface Observations Taken at 0900 MDT
31 August 1979, at LC-33, 19702A GSRS,
Missile Number BR-1, Round Number B-34

ELEVATION	3,977.30	FT/MSL
PRESSURE	880.1	MBS
TEMPERATURE	24.0	°C
RELATIVE HUMIDITY	66	%
DEW POINT	17.2	°C
DENSITY	1,023	GM/M ³
WIND SPEED	03	MPH
WIND DIRECTION	220	DEGREES
CLOUD COVER	1	Cu
CLOUD COVER	1	Cs

TABLE 2. LC-33 FIXED POLE ANEMOMETER-MEASURED WINDS

*PEN DID NOT INK POLE #1			POLE #2			POLE #3		
T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH
-30	*M	4.0	-30	122	4.0	-30	127	2.0
-20	M	2.0	-20	130	3.0	-20	127	2.0
-10	M	2.0	-10	132	4.0	-10	CALM	CALM
0.0	M	2.0	0.0	132	2.0	0.0	127	1.0
+10	M	2.0	+10	137	3.0	+10	CALM	CALM

Type 19702A GSRS, Missile No. BR-1, Round No. B-34 launched
from LC-33 on 31 August 1979 at 0900 MDT.

POLE #1 = X485,874.29 Y185,958.90 H4018.74 38.7 ft. AGL

POLE #2 = X485,874.93 Y186,012.00 H4033.57 53.0 ft. AGL

POLE #3 = X485,877.29 Y186,116.06 H4063.92 83.6 ft. AGL

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

TABLE 3. LC-33 METEOROLOGICAL TOWER ANEMOMETER-MEASURED WINDS (202 FT. TOWER)

LEVEL #1 12 ft.			LEVEL #2 62 ft.		
T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH
-30	CALM	CALM	-30	155	2.0
-20	CALM	CALM	-20	154	2.0
-10	CALM	CALM	-10	150	1.0
0.0	CALM	CALM	0.0	150	1.0
+10	CALM	CALM	+10	150	1.0
LEVEL #3 102 ft.			LEVEL #4 202 ft.		
T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH
-30	CALM	CALM	-30	138	2.0
-20	CALM	CALM	-20	138	2.0
-10	CALM	CALM	-10	138	2.0
0.0	CALM	CALM	0.0	138	2.0
+10	CALM	CALM	+10	138	2.0

WTSM Coordinates: X484,982.64 Y185,957.73 H3983.00 (base)

Type 19702A GSRS, Missile No. BR-1, Round No. B-34 launched
from LC-33 on 31 August 1979 at 0900 MDT.

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

PILOT BALLOON MEASURED WIND DATA

TABLE 4

RELEASED FROM LC-33 DATE 31 August 1979 TIME 0848 MDT

RELEASE POINT COORDINATES (WSTM) X=486,037.24 Y=182,350.16 Z=3,977.30

MISSILE TYPE 19702A GSRS MISSILE NO. BR-1 BOARD NO. B-34

MISSILE LAUNCHED FROM LC-33 DATE 31 August 1979 TIME 0900 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

HEIGHT - METERS AGL

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
SFC		CALM
60	143	02.1
120	143	02.2
180	138	02.7
240	141	02.1
300	179	03.9
360	173	05.3
420	150	06.2
480	160	08.5
540	159	10.5
600	168	11.7
660	178	10.2
720	184	09.5
780	182	07.1
840	179	07.5
900	196	09.1
960	209	11.5
1020	207	12.5
1080	210	10.9

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
1140	205	10.3
1200	201	10.8
1260	186	11.0
1320	188	08.1
1380	191	08.3
1440	210	05.5
1500	244	05.0
1560	207	03.5
1620	234	03.6
1680	232	03.7
1740		
1800		
1860		
1920		
1980		
2040		
2100		
2160		
2220		

PILOT BALLOON MEASURED WIND DATA

TABLE 5

RELEASED FROM LC-33 DATE 31 August 1979 TIME 0900 MDTRELEASE POINT COORDINATES (W.LTM) 486.037.24 182.350.16 3,977.30MISSILE TYPE 19702A GSRS MISSILE NO. BB-1 LAUNCHER NO. B-34MISSILE LAUNCHED FROM LC-33 DATE 31 August 1979 TIME 0900 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

HEIGHT - METERS AGL

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
500	220	03.0
600	239	00.0
700	090	03.6
780	133	05.4
240	102	04.6
300	143	04.9
360	186	04.9
420	180	06.3
480	198	05.7
540	203	07.5
600	204	10.0
660	190	12.0
720	183	10.9
780	192	09.0
840	186	07.9
900	186	07.9
960	201	09.7
1020	210	09.8
1080	211	09.0

HEIGHT AGL	DIRECTION DEGREE	
1140	210	09.0
1170	195	09.5
1200	194	09.5
1280	192	07.6
1320	195	05.9
1340	213	04.2
1370	211	04.4
1460	226	03.1
1530	232	02.9
1600	210	02.7
1740	203	01.9
1770	226	01.1
1860	050	00.8
1920	022	02.2
1990	001	03.6
2010	007	03.2
2100		
2160		
2220		

PILOT BALLOON MEASURED WIND DATA

TABLE 6

RELEASED FROM NICK DATE 31 August 1979TIME 0851 MDTRELEASE POINT COORDINATES (WGSIM) X= 470,734.56 Y= 255,775.64 Z= 4126.57MISSILE TYPE 19702A GSRS MISSILE NO. BR-1 ROUND NO. B-34MISSILE LAUNCHED FROM LC-33 DATE 31 August 1979 TIME 0900 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

HEIGHT - METERS AGL

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
SFC	140	04.0
60	130	05.0
120	121	06.0
180	159	05.0
240	162	04.5
300	159	05.0
360	169	06.0
420	176	07.5
480	181	07.5
540	172	07.0
600	183	05.0
660	149	02.5
720	107	01.5
780	007	01.0
840	300	01.5
900	265	03.5
960	268	05.5
1020	242	05.0
1080	262	04.5

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
1140	266	04.0
1200	280	01.5
1260	308	01.5
1320	259	00.5
1380	196	00.5
1440	225	02.0
1500	225	00.5
1560	214	00.5
1620	270	00.5
1680	188	00.5
1740	223	01.5
1800	234	02.5
1860	256	00.5
1920	254	01.5
1980	275	02.0
2040	270	01.5
2100		
2160		
2220		

PILOT BALLOON MEASURED WIND DATA

TABLE 7RELEASED FROM NICK DATE 31 August 1979 TIME 0900 MDTRELEASE POINT COORDINATES (WSTM) X= 470,734.56 Y= 255,775.64 H= 4126.57MISSILE TYPE 19702A GSRS MISSILE NO. BR-1 ROUND NO. B-34MISSILE LAUNCHED FROM LC-33 DATE 31 August 1979 TIME 0900 MDT

NOTE: WIND DIRECTIONS ARE REFERENCED TRUE NORTH.

HEIGHT - METERS AGL

HEIGHT AGL	DIRECTION DEGREES	SPEED KTS
SFC	120	02.0
60	233	00.5
120	152	04.0
180	146	04.5
240	151	04.5
300	174	04.5
360	169	04.0
420	181	04.5
480	179	07.5
540	178	07.0
600	193	04.5
660	187	03.5
720	131	03.0
780	105	01.5
840	112	00.5
900	280	01.5
960	261	05.0
1020	245	06.0
1080	237	05.0

HEIGHTS AGL	DIRECTION DEGREES	SPEED KTS
1140	241	03.0
1200	248	02.5
1260	273	02.0
1320	270	01.0
1380	252	01.5
1440	182	02.5
1500	096	01.0
1560	252	01.5
1620	201	02.0
1680	163	01.5
1740	214	01.0
1800	238	02.5
1860	277	01.5
1920	273	02.0
1980	292	01.5
2040	292	01.5
2100		
2160		
2220		

STATION ALTITUDE 3,977.30 FEET MSL
31 AUG. 79 0636 HRS MST
ASCENSION I.O. 206

SIGNIFICANT LEVEL DATA

243006Z0260

S W R

EODETIC COORDINATES
J2.48034 LAT LEG
106.42307 LON LEG

TABLE 8

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE DEGREES CENTIGRADE	AIR DEWPNT DEGREES CENTIGRADE	REL.HUM. PERCENT
879.2	3997.3	26.2	18.0	54.0
873.2	4195.3	23.7	15.7	61.0
850.0	4907.4	21.5	15.0	69.0
820.8	5961.5	18.8	14.7	77.0
795.8	6837.8	19.5	13.4	67.0
721.0	9507.6	14.7	5.0	52.0
700.0	10430.0	12.6	2.7	51.0
657.6	12141.7	8.0	2.5	98.0
640.2	12367.8	6.2	-1.7	27.0
597.2	14767.1	1.4	-4.9	63.0
572.4	15845.3	-1.3	-12.4	43.0
555.6	16615.4	-2.1	-22.0	19.0
547.6	17004.1	-1.4	-24.6	15.0
500.0	19306.6	-5.7	-26.9	14.0
484.8	20160.9	-6.6	-30.4	13.0
440.4	22601.0	-12.5	-34.4	14.0
426.0	23434.9	-13.3	-35.0	14.0
400.0	24995.9	-17.7	-38.0	14.0
364.8	27244.3	-22.9	-42.3	15.0
332.0	29433.7	-27.6	-46.2	15.0
314.4	30763.0	-28.5	-46.9	15.0
300.0	31863.8	-30.9	-46.9	15.0
284.6	33092.7	-33.3		
250.0	3961.5	-40.7		
236.4	37308.0	-43.7		
221.6	36753.2	-45.7		
200.0	40955.3	-51.0		
184.6	42629.9	-56.0		
160.6	43111.4	-58.4		
150.0	40923.5	-64.0		
141.0	40100.3	-67.6		
119.6	51852.7	-72.1		
113.4	52433.3	-69.8		
100.0	54924.0	-65.7		
89.4	57134.1	-71.5		
93.0	51400.0	-70.0		
76.4	51753.5	-62.2		
70.6	62042.2	-62.8		
65.2	62497.1	-50.0		
60.2	62153.9	-62.2		

STATION ALTITUDE 3,970 FEET MSL
31 AUG. 79 0836 HRS MST
ASCESSION 1.0. 2.06

SIGNIFICANT LEVEL DATA
2,300.000
S M R

EODEMIC COORDINATES
32°46'03.4" LAT DEG
106°42'30.7" LON DEG

TABLE 8 (Cont.)

PRESSURE	GEOMETRIC ALTITUDE	TEMPERATURE AIR DEGREES CENTIGRADE	KELVIN PERCENT
57.0	65970.1	-59.2	
52.0	67636.3	-60.8	
50.0	68900.0	-59.3	
42.0	72204.9	-55.8	
30.0	79727.9	-53.3	
22.0	85032.0	-46.6	
20.0	86547.7	-44.5	

SATATION ALTITUDE 3997.50 FEET MSL
31 AUG 79 0838 HRS MSL
ASL ELEVATION 1.00. 200

UPPER AIR DATA
S. W. R.

GEODETIC COORDINATES
52°46'03.4" LAT LEG
106°42'30.7" LONG LEG

TABLE 9

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF WIND IN KNOTS	WIND DATA DEGREES (1.)	INDEX OF REFRACTION.
3997.3	879.2	26.2	46.0	1.013.6	677.2	0	1.000318
4000.0	879.1	26.2	46.0	1.013.6	677.2	0	1.000318
4050.0	864.0	22.8	15.7	04.2	1006.9	672.9	1.000302
5030.0	849.0	21.4	15.5	09.3	993.2	671.3	1.000299
5500.0	834.2	20.1	15.1	73.3	982.4	669.7	1.000295
6000.0	819.7	18.8	14.6	76.6	970.5	666.3	1.000290
6500.0	805.3	19.4	13.6	70.9	954.4	660.0	1.000282
7000.0	791.2	19.2	12.7	66.1	933.1	650.3	1.000274
7500.0	777.3	16.3	11.3	63.4	922.9	607.3	1.000265
6000.0	763.6	17.5	9.8	60.7	909.8	666.1	1.000257
8500.0	750.1	16.6	8.3	57.9	892.3	650.0	1.000249
9000.0	736.9	15.7	6.4	55.2	884.1	643.8	1.000242
9200.0	723.9	14.9	5.2	52.5	871.5	636.7	1.000236
40000.0	710.9	13.7	3.9	51.5	859.8	664.2	1.000239
40500.0	696.2	12.4	2.8	51.7	848.3	659.7	1.000244
41000.0	685.6	11.1	2.8	56.7	838.9	653.1	1.000222
41500.0	673.2	9.7	2.7	61.6	823.0	660.9	1.000219
42000.0	661.0	8.4	2.5	66.6	814.7	663.0	1.000217
42500.0	649.0	7.1	2.2	62.6	805.7	659.4	1.000210
43000.0	637.0	5.9	-1.9	57.4	792.9	651.8	1.000203
43500.0	625.2	4.9	-2.7	59.0	781.9	650.2	1.000199
44000.0	613.7	3.3	-3.0	60.7	771.1	646.7	1.000195
44500.0	602.3	2.0	-4.5	62.3	760.5	647.1	1.000191
45000.0	591.1	0.7	-6.5	58.1	750.0	645.3	1.000186
45500.0	579.9	-5	-9.8	49.2	739.3	643.9	1.000180
46000.0	569.0	-1.5	-13.3	38.2	720.6	644.0	1.000173
46500.0	556.3	-2.0	-20.5	22.6	710.6	644.6	1.000166
47000.0	547.7	-1.4	-24.5	15.0	701.7	642.4	1.000161
47500.0	537.2	-2.3	-25.5	14.6	690.0	641.3	1.000158
48000.0	527.9	-3.2	-26.4	14.0	679.0	640.2	1.000155
48500.0	517.0	-4.1	-27.3	14.4	669.1	639.1	1.000152
49000.0	507.1	-5.0	-28.2	14.2	656.0	635.0	1.000150
49500.0	497.4	-5.9	-29.1	13.8	645.0	637.1	1.000147
50000.0	487.8	-6.4	-30.1	13.2	636.9	630.4	1.000145
50500.0	478.4	-7.4	-30.9	13.1	626.9	625.4	1.000142
51000.0	469.0	-8.0	-31.7	13.3	617.0	623.7	1.000140
51500.0	459.9	-9.0	-32.0	13.5	606.3	627.4	1.000138
52000.0	450.9	-11.0	-33.4	13.6	597.4	620.0	1.000135
52500.0	442.2	-12.3	-34.2	14.0	589.2	622.3	1.000133
53000.0	433.5	-12.9	-34.7	14.0	580.0	620.0	1.000131

STATION ALTITUDE 3,937.30 FEET MSL
31 AUG. 79 0030 HRS MST
ASCENSION I.O. 206

UPPLR AIR DATA
243000Z00
S N R

TABLE 9 (Cont.)

GEOMETRIC ALTITUDE FEET	PRESSURE MILLIBARS	TEMPERATURE DEGREES CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	WIND SPEED KNOTS	WIND DIRECTION DEGREES (T.I.)	WIND DATA KNOTS	INDEX OR REFRACTION
4350.0	424.9	-13.5	35.2	14.0	564.4	647.9	347.7	6.0
4400.0	416.4	-14.9	36.3	14.0	561.6	646.1	334.0	6.4
4450.0	408.1	-16.3	37.5	14.0	559.4	644.4	322.6	7.5
4500.0	400.0	-17.7	39.6	14.0	545.4	642.7	347.0	6.1
4550.0	391.9	-18.9	39.4	14.2	536.7	641.3	349.4	5.6
4600.0	383.9	-20.0	40.2	14.4	520.2	619.9	359.4	5.6
4650.0	376.1	-21.2	41.0	14.7	519.9	616.5	362.6	7.7
4700.0	368.5	-22.3	41.9	14.9	511.7	617.0	300.6	9.8
4750.0	360.9	-23.4	42.7	15.0	505.5	615.7	44.2	6.8
4800.0	353.4	-24.5	43.6	15.0	495.2	614.3	350.0	6.5
4850.0	346.1	-25.6	44.5	15.0	487.0	613.0	230.2	15.0
4900.0	339.0	-26.7	45.4	15.0	479.0	611.7	270.5	35.0
4950.0	331.9	-27.6	46.2	15.0	471.0	610.5	274.3	52.4
5000.0	325.0	-28.0	46.5	15.0	461.7	610.0	271.0	51.3
5050.0	316.2	-28.3	46.7	15.0	452.7	609.0	265.0	37.5
5100.0	311.5	-29.0	47.3	15.0	444.4	609.0	697.6	35.2
5150.0	304.9	-30.1	48.2	15.0	437.0	607.4	272.7	36.7
5200.0	298.5	-31.1	50.0	13.6**	429.0	606.1	279.4	39.4
5250.0	292.2	-32.1	52.1	13.6**	422.2	604.8	294.1	43.4
5300.0	285.9	-33.1	53.1	12.2**	415.0	603.6	284.6	45.6
5350.0	279.6	-34.3	54.3	12.2**	406.0	602.4	285.4	47.4
5400.0	273.7	-35.8	55.8	12.2**	401.3	601.5	280.4	46.5
5450.0	267.7	-36.8	56.8	12.2**	397.0	599.9	270.5	48.0
5500.0	261.9	-36.1	56.1	12.2**	389.1	597.3	270.5	47.1
5550.0	256.2	-39.3	59.3	12.2**	384.7	595.7	270.6	46.1
5600.0	250.7	-40.5	60.4	12.2**	370.4	594.4	269.1	40.4
5650.0	245.1	-41.3	60.7	12.2**	369.0	592.0	267.0	46.8
5700.0	239.7	-43.0	61.7	12.2**	362.7	591.1	267.7	49.3
5750.0	234.3	-44.0	62.0	12.2**	356.0	589.0	267.0	51.2
5800.0	229.1	-44.7	62.7	12.2**	349.3	586.9	267.4	56.6
5850.0	224.0	-45.4	63.4	12.2**	342.5	584.5	267.0	60.2
5900.0	219.6	-46.7	64.0	12.2**	335.3	582.0	265.0	63.0
5950.0	215.0	-47.7	64.9	12.2**	330.0	580.0	265.0	64.0
6000.0	209.0	-49.0	65.6	12.2**	324.9	578.0	264.2	62.0
6050.0	204.3	-50.3	66.3	12.2**	317.3	576.0	264.2	66.4
610.0	199.6	-51.0	67.0	12.2**	310.6	574.0	263.0	59.4
6150.0	195.0	-52.0	67.7	12.2**	305.4	572.0	263.0	56.0
6200.0	190.4	-54.3	68.4	12.2**	300.4	570.0	263.0	59.0
6250.0	185.9	-55.7	69.1	12.2**	295.3	568.0	263.0	59.0
6300.0	181.9	-56.5	69.9	12.2**	290.7	566.0	263.0	59.0

• AT LAST U.I. ADJUSTED RELATIVE HUMIDITY VALUE IN THE INFLUENCE AREA

UPPER AIR WINDS
243000Z NOV 54
TABLE 2 (CONT.)

TABLE 9 (Cont.)

DEPTHS IN FEET	PRESSURE AT SURFACE	TEMPERATURE AIR DEPOINT MILLIBARS DEGREES GRADE		SPECIFIC HEAT CAPACITY	SPEE- D OF WIND	WATER LEVEL	WATER TEMPERATURE	PEL.HUM. PERCENT	DENSI- TY GR/CUBIC FOOT	SPECI- AL GRAVITY	HUMID- ITY PERCENT	TEMPERATURE AIR DEPOINT MILLIBARS DEGREES GRADE
		IN FEET	IN METERS									
4450.0	177.2	-57.2	-28.9	574.4	267.0	59.3	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
4450.0	173.0	-55.5	-28.0	571.4	267.4	59.8	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
4450.0	168.8	-59.4	-27.0	570.1	269.0	61.3	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
4500.0	164.7	-69.5	-26.0	568.2	269.6	63.5	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
4550.0	160.8	-61.5	-26.4	569.7	269.6	64.7	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
4600.0	159.9	-62.6	-25.6	569.0	267.5	64.8	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
4650.0	155.1	-65.7	-25.4	565.0	267.4	65.0	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
4700.0	149.4	-64.6	-24.9	564.0	266.3	65.2	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
4750.0	145.7	-60.1	-24.5	564.2	266.3	65.4	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
4800.0	142.1	-67.4	-24.0	566.3	270.9	50.4	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
4850.0	138.6	-68.2	-23.5	567.7	270.4	46.7	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
4900.0	135.1	-66.3	-23.0	566.9	272.5	43.6	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
4950.0	131.7	-69.4	-22.0	560.1	272.9	40.9	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
5000.0	128.4	-69.9	-22.0	559.4	275.2	39.0	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
5050.0	125.2	-70.5	-21.4	554.5	277.7	37.1	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
5100.0	122.0	-71.1	-21.0	552.0	279.0	35.0	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
5150.0	119.9	-71.7	-20.7	550.5	282.0	32.6	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
5200.0	115.9	-71.5	-20.3	550.2	284.4	28.4	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
5250.0	113.0	-69.7	-20.1	550.4	287.0	22.6	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
5300.0	110.2	-69.1	-19.4	552.1	294.5	17.6	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
5350.0	107.5	-68.5	-18.9	557.4	297.0	13.7	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
5400.0	104.8	-67.9	-17.8	560.4	300.4	10.1	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
5450.0	102.2	-67.2	-17.6	560.5	305.0	9.2	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
5500.0	99.6	-66.9	-16.6	560.4	310.6	10.5	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
5550.0	97.1	-65.0	-15.5	564.9	316.1	12.5	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
5600.0	94.7	-63.0	-14.7	566.0	320.0	15.2	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
5650.0	92.0	-62.3	-13.9	565.4	323.4	14.2	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
5700.0	90.0	-71.2	-13.0	565.4	326.4	14.0	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
5750.0	87.7	-71.1	-12.0	564.5	330.4	9.4	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
5800.0	85.5	-70.5	-11.5	564.0	334.0	6.9	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
5850.0	83.4	-69.4	-10.4	564.0	337.5	6.5	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
5900.0	81.3	-66.5	-9.3	567.4	340.4	1.9	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
5950.0	79.3	-63.6	-8.3	563.0	343.4	1.0	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
6000.0	77.4	-62.3	-7.0	567.0	346.0	2.5	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
6050.0	75.5	-60.5	-5.7	566.0	348.0	7.1	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
6100.0	73.6	-58.7	-4.4	566.4	350.0	11.0	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
6150.0	71.9	-56.7	-3.1	567.0	351.4	12.7	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
6200.0	70.1	-54.9	-1.8	567.0	352.4	14.2	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
6250.0	68.3	-53.0	-0.5	567.0	353.4	15.7	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
6300.0	66.5	-51.2	-0.2	567.0	354.4	17.2	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
6350.0	64.7	-49.4	-0.9	567.0	355.4	18.7	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
6400.0	62.9	-47.6	-1.6	567.0	356.4	20.2	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
6450.0	61.1	-45.7	-2.3	567.0	357.4	21.7	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
6500.0	59.3	-43.9	-3.0	567.0	358.4	23.2	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
6550.0	57.5	-42.1	-3.7	567.0	359.4	24.7	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
6600.0	55.7	-40.3	-4.4	567.0	360.4	26.2	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
6650.0	53.9	-38.5	-5.1	567.0	361.4	27.7	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
6700.0	52.1	-36.7	-5.8	567.0	362.4	29.2	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
6750.0	50.3	-34.9	-6.5	567.0	363.4	30.7	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
6800.0	48.5	-33.1	-7.2	567.0	364.4	32.2	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
6850.0	46.7	-31.3	-7.9	567.0	365.4	33.7	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
6900.0	44.9	-29.5	-8.6	567.0	366.4	35.2	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
6950.0	43.1	-27.7	-9.3	567.0	367.4	36.7	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
7000.0	41.3	-25.9	-10.0	567.0	368.4	38.2	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
7050.0	39.5	-24.1	-10.7	567.0	369.4	39.7	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
7100.0	37.7	-22.3	-11.4	567.0	370.4	41.2	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
7150.0	35.9	-20.5	-12.1	567.0	371.4	42.7	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
7200.0	34.1	-18.7	-12.8	567.0	372.4	44.2	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
7250.0	32.3	-16.9	-13.5	567.0	373.4	45.7	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
7300.0	30.5	-15.1	-14.2	567.0	374.4	47.2	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
7350.0	28.7	-13.3	-14.9	567.0	375.4	48.7	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
7400.0	26.9	-11.5	-15.6	567.0	376.4	50.2	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
7450.0	25.1	-9.7	-16.3	567.0	377.4	51.7	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
7500.0	23.3	-7.9	-17.0	567.0	378.4	53.2	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
7550.0	21.5	-6.1	-17.7	567.0	379.4	54.7	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
7600.0	19.7	-4.3	-18.4	567.0	380.4	56.2	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
7650.0	17.9	-2.5	-19.1	567.0	381.4	57.7	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
7700.0	16.1	-0.7	-19.8	567.0	382.4	59.2	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
7750.0	14.3	-8.9	-20.5	567.0	383.4	60.7	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
7800.0	12.5	-7.1	-21.2	567.0	384.4	62.2	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
7850.0	10.7	-5.3	-21.9	567.0	385.4	63.7	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
7900.0	9.0	-3.5	-22.6	567.0	386.4	65.2	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
7950.0	7.2	-1.7	-23.3	567.0	387.4	66.7	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
8000.0	5.4	-0.9	-24.0	567.0	388.4	68.2	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
8050.0	3.6	-0.1	-24.7	567.0	389.4	69.7	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
8100.0	1.8	-18.5	-25.4	567.0	390.4	71.2	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
8150.0	0.0	-36.7	-26.1	567.0	391.4	72.7	1.000004	1.000004	1.000004	1.000004	1.000004	1.000004
820												

STATION ALTITUDE 3997.30 FEET MSL
31 AUG. 79 0836 HRS MST
ASCENSION NO. 286

UPPLR AIR DATA
243000Z0255Z
5 M R

GEOMETRIC PRESSURE
ALTITUDE
MSL FEET MILLIBARS

GEOMETRIC PRESSURE ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL.HUM. PERCENT	SPD OF SOUND KNOTS	WIND DATA DEGREES (TIN) KNOTS	WIND DATA OF REFRACTION
63500.0	65.2	-60.0	100.5	560.8	12.1
64000.0	63.6	-60.7	104.3	567.9	14.7
64500.0	62.1	-61.3	102.1	567.0	16.9
65000.0	60.6	-62.0	100.0	560.1	18.9
65500.0	59.1	-60.9	97.1	567.6	19.3
66000.0	57.7	-59.2	94.0	569.8	21.3
66500.0	56.3	-59.7	91.9	569.2	22.7
67000.0	55.0	-60.1	89.9	560.7	22.3
67500.0	53.7	-60.5	87.9	560.1	22.0
68000.0	52.4	-60.6	85.8	560.0	20.5
68500.0	51.1	-59.9	83.5	566.9	18.3
69000.0	49.9	-59.3	81.3	569.3	16.3
69500.0	48.7	-58.7	79.2	570.5	15.4
70000.0	47.6	-58.2	77.1	571.2	15.1
70500.0	46.4	-57.6	75.1	571.9	15.5
71000.0	45.3	-57.1	73.1	572.6	16.2
71500.0	44.3	-56.6	71.4	573.3	16.9
72000.0	43.2	-56.0	69.3	574.1	18.1
72500.0	42.2	-55.7	67.6	574.5	19.6
73000.0	41.2	-55.5	66.0	574.7	21.1
73500.0	40.3	-55.4	64.4	574.9	22.3
74000.0	39.3	-55.2	62.8	575.1	23.5
74500.0	38.4	-55.0	61.3	575.4	24.4
75000.0	37.5	-54.9	59.9	575.6	24.8
75500.0	36.6	-54.7	58.4	575.8	25.2
76000.0	35.8	-54.5	57.0	576.0	25.3
76500.0	34.9	-54.4	55.9	576.2	25.4
77000.0	34.1	-54.2	54.3	576.4	25.5
77500.0	33.3	-54.0	53.0	576.6	25.9
78000.0	32.6	-53.9	51.7	576.9	26.4
78500.0	31.8	-53.7	50.5	577.1	26.9
79000.0	31.0	-53.5	49.3	577.3	26.6
79500.0	30.3	-53.4	48.1	577.5	26.1
80000.0	29.6	-53.0	46.9	578.0	25.0
80500.0	28.9	-52.5	45.7	578.2	25.7
81000.0	28.3	-51.9	44.5	578.4	25.9
81500.0	27.6	-51.4	43.4	578.6	26.2
82000.0	27.0	-50.9	42.3	578.8	28.5
82500.0	26.4	-50.4	41.2	579.0	30.0
83000.0	25.8	-50.0	40.2	579.2	30.9

TABLE 9 (Cont.)

GEODETIC COORDINATES
32.4834 LAT DEG
106.42307 LONG DEG

UPPLR AIR DATA
243000Z0255Z
5 M R

DATA 24 AUGUST 1957-30 FEET ASL
 51 ANS. 79 000 HRS HST
 ASCEND. 140. 250

UPR AIR LAT
 24300.000
 S. R.

SOLAR COORDINATES
 22° 48' 03" LAT LON
 100° 42' 30" LON LON

TABLE 9 (Cont)

GEOMETRIC PRESSURE	TEMPERATURE	REL.HUM.	SPD OF	WIND DATA	INDEX
ATMOSPHERE	ATM DEP. POINT	PERCENT	CM/CUBIC METER	WIND DIRECTION	OF
ASL F.CI.	DEGREES CELSIUS GRADE		KNOTS	MINUTES	REFRACTION
03500.0	-45.2	34.2	355.9	04.3	31.7
04000.0	24.6	34.2	585.0	00.2	32.7
04500.0	-44.1	-44.2	584.2	00.0	34.3
05030.0	23.5	-47.7	37.3	00.0	36.0
05520.0	23.0	-47.2	35.3	00.0	36.0
06000.0	22.4	-46.7	503.6	00.4	36.3
06500.0	21.9	-46.2	565.3	02.2	36.6
07060.0	21.5	-45.8	35.7	58.0	36.6
07520.0	21.0	-45.4	32.9	587.4	36.6
08000.0	20.5	-45.0	32.1	587.9	36.6
08500.0	20.0	-44.5	31.3	588.5	36.6
			30.5	589.0	36.6

STATION ALTITUDE 3997.30 FEET
31 AUG. 79
ASSEMBLY NO. 266

MANUFACTURER LEVELS
243000ZGZ
S R

EQUATORIAL COORDINATES
52°46'03.4" LAT LG
106°42'30.7" LON LG

TABLE 10

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE DEGREES CENTIGRADE	WIND DATA	
			AIR DE-POINT PERCENT	DIRECTION DEGREES (IN) SPEED KNOTS
850.0	4964.	21.5	15.6	156.4 4.4
800.0	6083.	19.4	13.5	104.0 2.2
750.0	8502.	16.6	8.2	151.2 4.7
700.0	10420.	12.6	2.7	307.9 0.6
650.0	12444.	7.2	0.7	154.0 3.4
600.0	14380.	1.7	-4.0	129.0 2.1
550.0	16868.	-1.6	-24.0	111.0 5.6
500.0	19339.	-5.7	-28.9	304.0 4.7
450.0	22024.	-11.2	-33.5	334.0 7.0
400.0	24957.	-17.7	-38.0	347.1 0.2
350.0	26187.	-25.0	-44.0	296.0 3.6
300.0	31020.	-31.9	-48.9	277.0 3.9
250.0	35982.	-40.7	-51.5	208.9 4.0
200.0	40850.	-51.5	-57.6	201.9 5.9
175.0	43055.	-64.6	-62.6	267.5 5.9
150.0	46792.	-70.6	-62.6	220.1 5.9
125.0	50387.	-66.7	-62.0	277.0 3.7
100.0	54753.	-64.6	-59.3	247.2 10.0
80.0	59126.	-64.6	-55.3	272.0 4.7
70.0	61626.	-62.6	-53.3	052.2 14.6
60.0	64967.	-62.0	-49.1	00.4 2.0
50.0	66699.	-59.3	-44.5	60.3 1.5
40.0	73335.	-55.3	-44.5	91.5 2.8
30.0	79365.	-53.3	-44.5	100.9 2.9
20.0	83274.	-49.1	-44.5	64.1 2.4
	88130.	-44.5		